

Amendments to the Claims:

This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1 (Canceled)

2 (Previously Presented): A method of producing a solid electrolyte comprising:

preparing solid electrolyte material with a composition expressed by a formula: $(1-x)$

$\text{ZrO}_2 + x\text{Sc}_2\text{O}_3$ (where x is a number equal to or greater than 0.05 and equal to or less than 0.15);
and

sintering the solid electrolyte material to obtain a solid electrolyte using a spark plasma method, which is provided with:

sintering the solid electrolyte material to obtain sintered material while applying a first compression load to the solid electrolyte material at a level equal to or less than 40 MPa; and

cooling the sintered material to obtain the solid electrolyte while applying a second compression load, less than the first compression load, to the sintered material, wherein the second compression load has a value equal to or greater than 10 MPa and equal to or less than 15 MPa.

3 (Previously Presented): The method according to claim 2, wherein the solid electrolyte material is sintered at a temperature equal to or greater than 1000 °C and equal to or less than 1150 °C for time equal to or greater than 30 minutes and equal to or less than 180 minutes.

4 (Previously Presented): The method according to claim 2, wherein the solid electrolyte material is sintered by rising a temperature at a temperature rising speed equal to or greater than 250 °C/minute.

5 (Previously Presented): The method according to claim 2, wherein after sintering the solid electrolyte material, the solid electrolyte material is cooled by dropping a temperature at a temperature drop speed equal to or less than 200 °C/minute.

6 (Previously Presented): The method according to claim 2, wherein the solid electrolyte material is comprised with powder of citric acid salt.

7 (Previously Presented): The method according to claim 2, wherein the solid electrolyte material is calcined and pulverized prior to sintering.

8 (Previously Presented): The method according to claim 2, wherein the solid electrolyte material is formed in a compact while being sintered.

9 (Previously Presented): The method according to claim 2, wherein after the solid electrolyte material is sintered, heat-treatment is conducted at a temperature equal to or greater than 900 °C and equal to or less than 1000 °C for time equal to or greater than 5 hours and equal to or less than 15 hours.

10 (Previously Presented): The method according to claim 2, wherein suppose that an X-ray diffraction intensity is I, the solid electrolyte has a cubic crystal ratio, $[I(\text{cubic crystal: 220}) / \{I(\text{cubic crystal: 220}) + I(\beta\text{-phase: 220})\}] \times 100 (\%)$, equal to or greater than 90 %.

11 (Previously Presented): The method according to claim 2, wherein the solid electrolyte has a mean grain diameter equal to or less than 3 μm.

12 (Canceled)